-continued

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            180                 185                 190

Glu Glu Glu Asn Asp Glu Ile Asp Gly Val Asn His Gln His Leu Pro
        195                 200                 205

Ala Arg Arg Ala Glu Pro Gln Arg His Thr Met Leu Cys Met Cys Cys
    210                 215                 220

Lys Cys Glu Ala Arg Ile Glu Leu Val Val Glu Ser Ser Ala Asp Asp
225                 230                 235                 240

Leu Arg Ala Phe Gln Gln Leu Phe Leu Asn Thr Leu Ser Phe Val Cys
                245                 250                 255

Pro Trp Cys Ala Ser Gln Ser Asp Ser Val Tyr Gly Asp Thr Leu Glu
            260                 265                 270

Lys Leu Thr Asn Thr Gly Leu Tyr Asn Leu Leu Ile Arg Cys Leu Arg
        275                 280                 285

Cys Gln Lys Pro Leu Asn Pro Ala Glu Lys Leu Arg His Leu Asn Glu
    290                 295                 300

Lys Arg Arg Phe His Asn Ile Ala Gly His Tyr Arg Gly Gln Cys His
305                 310                 315                 320

Ser Cys Cys Asn Arg Ala Arg Gln Glu Arg Leu Gln Arg Arg Arg Glu
                325                 330                 335

Thr Gln
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What is claimed is:

1. A recombinant pox virus vector comprising a nucleic acid sequence encoding a first polypeptide comprising the amino acid sequence of SEQ ID NO:20.

2. The recombinant pox virus vector of claim **1**, wherein the recombinant pox virus vector is a recombinant Modified Vaccinia Ankara (MVA) vector.

3. The recombinant MVA vector of claim **2**, wherein the first polypeptide further comprises at least one epitope of a human papillomavirus (HPV) E2 protein.

4. The recombinant MVA vector of claim **3**, wherein the HPV E2 protein is an HPV18 E2 protein having a deletion or mutation in its DNA binding domain and/or a mutation in its transactivation domain.

5. The recombinant MVA vector of claim **4**, wherein the first polypeptide comprises the amino acid sequence of SEQ ID NO:22.

6. The recombinant pox virus vector of claim **1**, further comprising a nucleic acid sequence encoding a second polypeptide comprising the amino acid sequence of SEQ ID NO:1.

7. The recombinant pox virus vector of claim **6**, wherein the recombinant pox virus vector is a recombinant MVA vector.

8. The recombinant MVA vector of claim **7**, wherein the second polypeptide further comprises an HPV16 E2 protein having a deletion or mutation in its DNA binding domain and/or a mutation in its transactivation domain.

9. The recombinant pox virus vector of claim **1**, wherein the nucleic acid sequence encoding the first polypeptide is operably linked to a promoter.

10. A recombinant cell comprising the recombinant pox virus vector of claim **1**.

11. A recombinant cell comprising the recombinant MVA vector of claim **2**.

12. A recombinant cell comprising the recombinant pox virus vector of claim **6**.

13. A recombinant cell comprising the recombinant MVA vector of claim **7**.

14. A method for producing a recombinant pox virus vector, comprising growing the recombinant cell of claim **10** under conditions for production of the recombinant pox virus vector.

15. A vaccine composition comprising the recombinant pox virus vector of claim **1**.

16. A vaccine composition comprising the recombinant MVA vector of claim **2**.

17. A vaccine composition comprising the recombinant MVA vector of claim **3**.

18. A vaccine composition comprising the recombinant MVA vector of claim **4**.

19. A vaccine composition comprising the recombinant MVA vector of claim **5**.

20. A vaccine composition comprising the recombinant pox virus vector of claim **6**.

21. A vaccine composition comprising the recombinant MVA vector of claim **7**.

22. A vaccine composition comprising the recombinant MVA vector of claim **8**.

23. The vaccine composition of claim **15**, further comprising a second recombinant pox virus vector comprising a nucleic acid sequence encoding a second polypeptide comprising the amino acid sequence of SEQ ID NO: 1.

24. The vaccine composition of claim **23**, wherein the second recombinant pox virus vector is a recombinant MVA vector.

25. A method of generating an immune response against HPV18, comprising administering to a subject in need thereof the vaccine composition of claim **16**.

26. A method for treating a subject having persistent HPV infection, vulvar intraepithelial neoplasia (VIN), cervical